OPTIMUM PRODUCT MIX & SALES STRATEGY

FOR

THE EXISTING PRODUCTS OF INFONET BV

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Prepared for:

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I.   <u>INTRODUCTION</u>

●   This report was commissioned on 1st June 1982 by the management of
       Infonet BV (the systems house subsidiary of the ARC Automation
       Services Group) of Amsterdam. The assignment resulted after:

       -      The issuing by Infonet in February 1982 of an Advice Request
              specification (reference BD/I/MW/II - 82.065 of Feb 16 1982).

       -      A meeting between Mr P L W Arts and Mr B C M Douque of ARC
              and Mr M Longy for INPUT Limited, held on 3rd March 1982 at
              ARC's Amstelveen offices.

       -      Discussions between Infonet and Mr K Hocking of INPUT Limited
              consequent upon INPUT's telexed proposal of 4th March 1982.

●   Work commenced on 14th June 1982 and has consisted of:

       -      Two week-long visits to The Netherlands to investigate the
              Infonet (and certain overlapping ARC) products, and their
              acceptability in the Dutch marketplace.

       -      Two weeks of analysing these findings in the light of INPUT's
              knowledge of the Dutch market for computing services and
              writing up the conclusions and recommendations.

A.   SCOPE & METHODOLOGY

●   The objectives of the study are:

       -      To examine the range of existing products and services.

       -      To qualify them from the point of view of marketability,
              taking into account:

- their future potential markets;
- their quality as products;
- Infonet's ability to produce and market them profitably.

- To make recommendations on:

    - which products should be marketed;

    - how best they can be marketed, bearing in mind the re-
      organisation of ARC and Infonet currently taking place,
      and the overlap with comparable products in the ARC cata-
      logue of services and systems.

- The assumptions behind this approach to the current situation at
Infonet, which would justify it as being the correct one, are:

  - the Infonet products have a place in the overall marketing
    stance of the ARC group;

  - a selection of marketable products can be made from among
    those in the existing Infonet catalogue, which can be sold
    and supported profitably by an integrated ARC-Infonet organi-
    sation structure and without drawing off a disproportionate
    amount of the overall group's management effort.

- The time available has not enabled INPUT to examine or evaluate
the validity of these assumptions but it is INPUT's belief that
these questions need to be borne in mind as it is not immediately
obvious that the Infonet product range has a great deal of synergy
with the ARC range of services.

- The methodology employed in a short overview study of this present
kind has been to:

  - spend a considerable amount of time learning about the quite
    highly diversified range of systems being marketed in
    Infonet's three divisions;

- talk to a selection of Infonet and ARC customers to get a feel for how the products are implemented by the group and how they are evaluated by the marketplace in comparison with their competitors;

- use INPUT's existing database of information on the Benelux markets to gauge the theoretical potential markets available;

- supplement this information from other market research reports, such as that published under the auspices of COSSO with the title of ACSI.

It has not been possible to carry out specific market research interviews into all the sectors in which the company is involved. It is more important at this stage to complete a broad evaluation and then, in later research work, to investigate in greater depth the potential and requirements of the areas which look most promising.

B.   STRUCTURE OF THE REPORT

The structure of this report follows closely on the logical sequence of the investigation. It is also dictated by the emphasis implicit in the study's objectives:

- A lot of coverage has been given to the quality and market potential of the company's products.

- The concept of the 'product group' (a set of products, systems and/or services which can be marketed as a coherent whole) is introduced in the last two sections.

-   Organisational matters are only dealt with from the ideal
    standpoint, ie how best to address the chosen marketplaces.
    No attempt is made to discuss questions related to production
    or finance, except in so far as any key factors might be
    implicated.

The report contents include:

-   An executive summary highlighting the important conclusions
    and recommendations.

-   Three sections detailing the findings on and the analysis of
    the relevant Infonet (and ARC) products.

-   A final section giving the detailed recommendations for imme-
    diate and future marketing and product development.

II.   EXECUTIVE SUMMARY

- The ARC-Groep has reached an important stage in its overall deve-
lopment. Having started its latest phase of development some five
years ago, it has since then been through a period of steady
growth and diversification at approximately 10% per annum.

- The stage has now been reached where a new level of management
formality, somewhat stricter, and certainly as flexible is
required.

- The days of unlimited and easy growth are numbered. The computer
services industry in the Netherlands bears all the marks of a
rapidly maturing market, though fast growth areas remain:

  - Micro-computer based small business systems,
  - Software products.

- The prize for future leadership in the Netherlands home market can
only be won and maintained by companies which manage to break out
of the national mould and exploit the systems they have developed
on an international plane. From such a base, continuous upgrading
of products and services for domestic markets will be more likely
to succeed, as investment for the home base can be paid for out of
profitable overseas sales.

A.   OPTIMUM PRODUCT MIX

1.   CONCLUSIONS

- INPUT has studied and analysed the current products of Infonet and
the products of ARC which overlap with them. While understanding
the short-term problems, INPUT has concluded that focussed efforts
at selling the majority of these products both nationally and
internationally is possible if the company itself becomes more

aware of the products it has, how they relate to each other and can thus be grouped into product group families and what sales strategies need to be implemented for success.

- At the same time, INPUT has become aware of the absence of good market planning and development.

- The major need in the short and medium terms is to find and exploit the synergies in the group between the software house and the service bureau sides of the business.

- Exhibit II-1 crystallises INPUT's thoughts on how future products can be generated and brought to market in a combined systems house-bureau company whose basic product is the "solution".

2.   RECOMMENDATIONS

- Technical System division is currently trying to market at least 12 products using a senior systems analyst on a part-time basis. No more than 9 of these products should be actively promoted and there is a detailed ranking which shows that the top four are current, have good support from within the division and should be prime areas:

  - VAX know-how
  - Image processing
  - Laboratory testing
  - Process control, especially if related to Gas-flow control.

- The sales effort is woefully inadequate to support continuous order growth. It must be increased. At the same time the temptation must be resisted to oscillate senior technical key staff between sales and production.

- Graphics Services division is an unusual adjunct to a systems house because it represents in some product areas a form of direct

DEVELOPMENT CYCLE
IN A COMPUTER SERVICES COMPANY

TO MARKETS

↑ ↑ ↑ ↑ ↑

SALES
SERVICES AND PRODUCTS

TO MARKETS

↑ ↑ ↑ ↑

SALES
PROJECTS

PRODUCT DEVELOPMENT
. EVALUATE
. BUILD & TEST

Ideas

Ideas

TECHNICAL DIRECTORATE
. ASSESS IDEAS
. SUPPORT DEV.

EXHIBIT II - 1
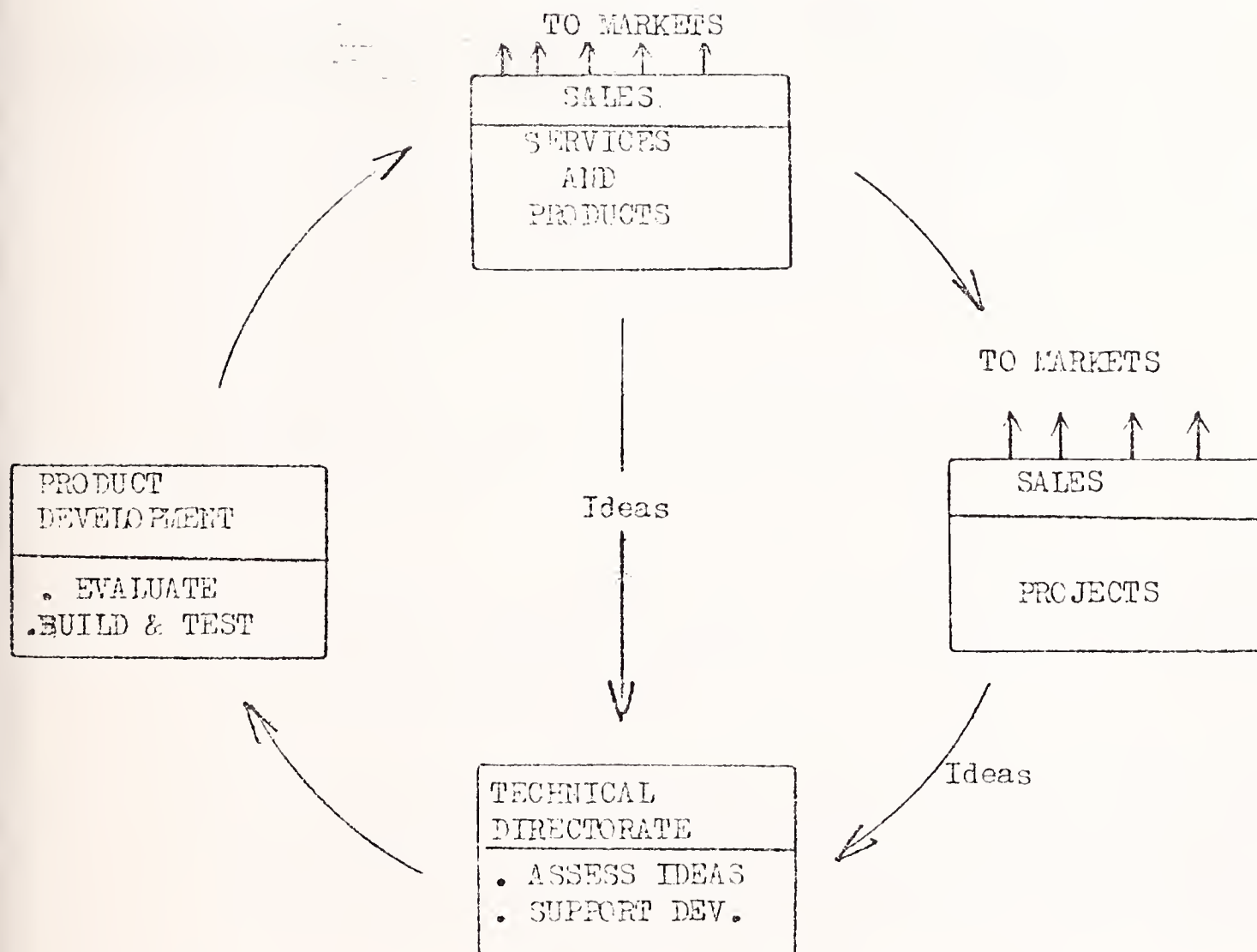
competition with the typesetting sector. The products of Infonet are well-received by the marketplace. The unit must be given an injection of professional sales capability and be revitalised by support from the reorganised group sales force.

o   This is an immediate requirement and is a relatively simple one to implement.

o   In the fairly centralised sales structure envisaged by INPUT there is every reason to be confident of this being a successful area.

o   It is recommended that the membership administration applications should be satisfactorily rationalised by integrating sales within one of the recommended future business units. This is an application area in which the group has a current edge.

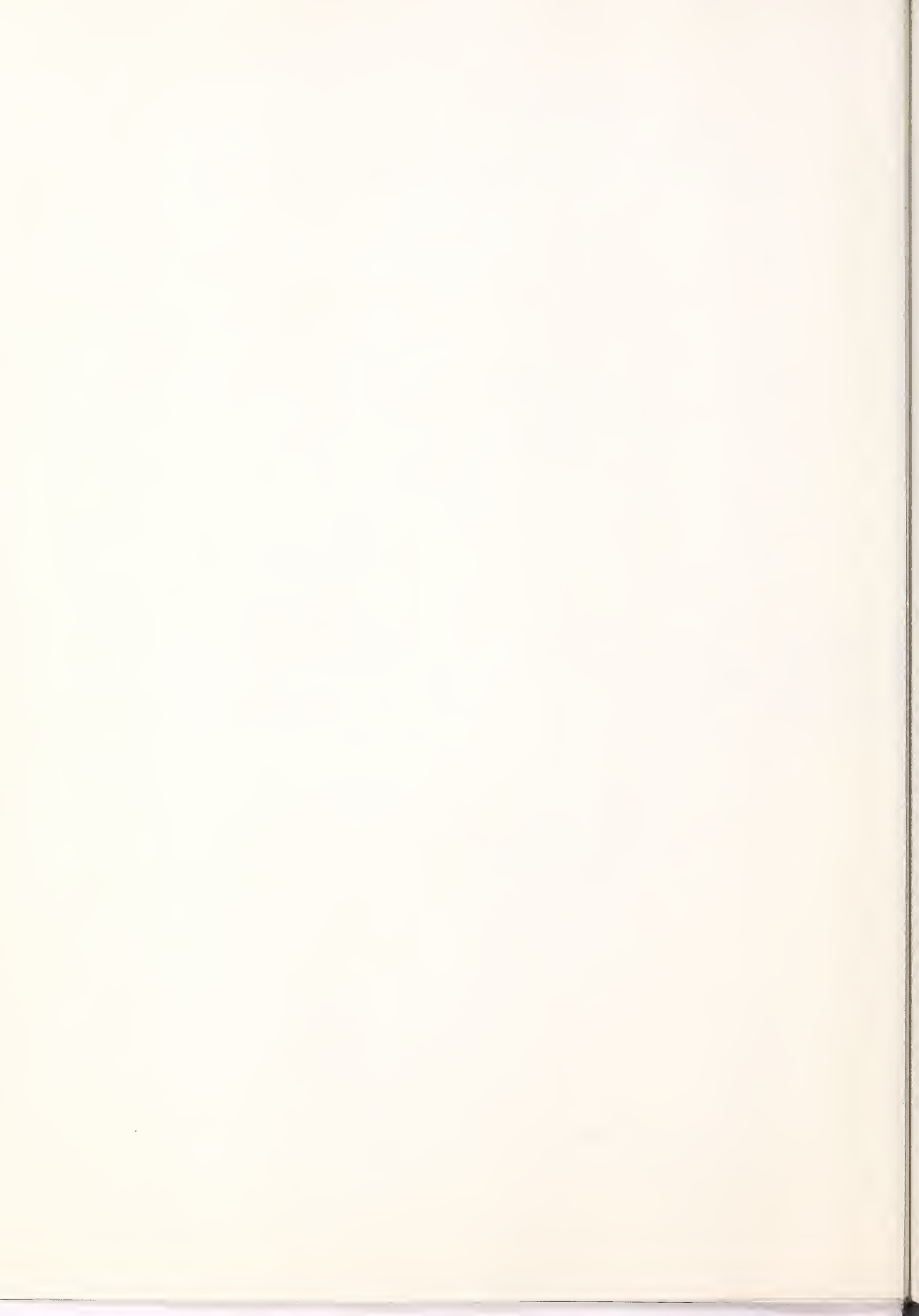o   Recommendations for treatment of the existing 15 products in the Administrative Systems division are radical:

- Seven product areas are ready to be marketed, of which four are in the Text systems area,

- The majority of the small business systems have good potential but cannot be sold with profit, without further market investigation and consolidation of the selling function; because:-

  . They address relatively small market areas whose current penetration with competitive systems is not known,

  . There is a lack of confidence between sales and production in the company's ability to be successful in this area,

- They should not be actively sold until further market research has confirmed their worth or otherwise.

o   The same recommendation to cease active marketing is extended to
        the ARC and ELAN small business systems.

o   Active marketing for Large Business systems should start at once
        as there is bound to be a lead-time in getting back onto the large
        project proposal circuit.

o   To sum up, INPUT's recommendations are that to be successful
        Infonet must go back to its roots in large complex systems
        (whether for technical or administrative applications) and must
        abandon attempts to turn itself into a small systems repeat busi-
        ness company. By doing so it will rediscover its potential
        synergy with ARC, and will be able to act as a power-house of new
        ideas and potential R&D.

B.   FUTURE SALES STRATEGY

1.   CONCLUSIONS

o   ARC as a group is aware that its sales organisation needs
        overhaul. INPUT wishes to see this restructuring go through with
        all speed, but is of the opinion that there is a big challenge to
        the company in managing this transition successfully.

o   Sales effort in the Infonet areas has been well down on what is
        adequate. Current small improvements in numbers of prospects
        should encourage the use of increased sales effort on the part of
        all senior staff.

2.   RECOMMENDATIONS

o   For the next period of development sales resources should be
        managed centrally under a Field Sales Manager.

o   The distinction must be formally made between Product and Project
        sales.

9

- Product sales are of a repeat nature and are handled from initiation to close by Field Sales,

- Project sales require joint steering during the proposal stage and the Technical Director should be the other formal partner in this process.

o   Six Business units should be set up to market the whole range of ARC services and projects.

o   Product development should be formally adopted as a central function, but it must be given terms of reference which enable it to function in-line during product testing and evaluation stages.   An immediate task is available for it - to evaluate and launch a range of turnkey small business systems.

o   A Technical Directorate must be set up to co-ordinate all line and staff functions which have a technical content.

III.   THE INFONET RANGE OF PRODUCTS & SERVICES

o   Infonet is present in three main areas of the systems house
         market:

         -       Technical systems development; primarily, the provision of
                 software systems for scientific research and technical appli-
                 cations.

         -       Text processing services; primarily, the provision of text
                 preparation for the printing and publishing industries or
                 for those same functions as provided in-house in other indus-
                 tries; this will be referred to as the Graphics Services
                 (Bureau) Division, though it should be remembered that the
                 word graphics is usually a term applied in the data process-
                 ing field to applications using 2-D and 3-D line drawings on
                 digital plotters and specialised CRT terminals.

         -       Administrative systems; a system may be supplied either as
                 software only or as a complete turnkey system including pro-
                 vision of hardware.

A.   TECHNICAL SYSTEMS DIVISION

1.   Product Areas

o   Though Infonet's experience in the technical systems area dates
         back at least ten years, the Technical Systems Division (TSD) is
         currently the smallest of the three divisions.

o   Application areas, in which the company has a project base or
         experience record, are:

- laboratory systems, illustrated by the continuing contracts issued to the company by the ESTEC organisation (who are a very satisfied customer);

- CAD graphics data management, a system for storing and manipulating radar pictures;

- gas flow control for an oil company;

- image processing, also for ESTEC;

- traffic control, two systems, one for local tunnel control, the second for a city area traffic lights;

- data communications and videotex.

o   All of these areas have involved a high technical content. Infonet's particular contributions (which have enabled contracts to be won or which have stuck in customer memories) are:

- design capability;
- high quality of staff.

o   TSD management, in the person of Mr J Gras, believes that one of Infonet's impressive features is the quality of design and in particular their ability to have continuity of design through from one project to another. Another point of current interest to the market is Infonet's experience in building secure, 'fail-safe' systems.

o   A key question is how to market these repeatable and valuable assets.

o   In order to target in on a defined set of market areas to which TSD might address its sales effort, a list of nine sectors was

drawn up, as shown in Exhibit III-1. This exhibit incorporates Mr Gras' view of the the areas in which expertise lies. In order to balance the figures to the total line at the bottom, it has been necessary to ignore the overlaps between different areas when a project has elements of more than one in its composition.

o   Three types of submarket area are present in the analysis:

-   an account area type, illustrated by the ESTEC account which can produce a number of different applications - image processing, equipment testing, software research;

-   the application type, as evidenced by process control, CAD, traffic control, etc;

-   the cross application function type, eg networking, VAX, etc know-how.

-   Since these three sub-types each represent a different market approach and require a distinct sales effort, it is clear that the sales marketing problem as applied to TSD requires a multi-dimensional solution and is not capable of easy systemisation. This theme will be taken up in later chapters dealing with recommendations.

2.   Sales Forecast

o   The revenue forecast for 1982 at just under f.1.3 million is set to give a 14% increase over that of 1981, but the average revenue obtained from each customer is due to fall by almost 12%. However, this latter is still higher than the average client expenditure in any other part of the ARC group.

o   The sales days anticipated to be spent in 1982 represent 0.8 of one man-year (assuming a salesman-year of two hundred working

Exhibit III-1

DIVISION : TECHNICAL SYSTEMS

Staff nos: Production - 10½
                   Sales - ½
                   Other - 1
                   Total - 12

PRODUCT/ SERVICE	No. of Customers 1981	Revenue (f.k) 1981	Expected no. of Customers (1982)	Estimated Revenue (f.k) 1981	Average Revenue (f.k) per customer 1981	1982	No. of sales days allocated 1981	1982	Estimated Potential Customers in Netherlands	Comments
1. ESTEC, Image Processing	1	400	1	450	400	450	70	40	12	
2. ESTEC, Other	1	370	1	280	370	280	15	15	1	
3. CAD Type Projects	-	-	1	90	-	90	5	25	100	
4. Gas-Flow & Other	2	135	1	280	67.5	280	20	60	100	
5. Other Instrumentation	-	-	-	-	-	-	-	-	150	
6. Traffic Control	1	140	1	80	140	80	15	5	4	
7. VAX Know-How	1	-	2	10	-	5	-	5	100-150	VAX sit€
8. Failsafe Systems	1	-	3	100	-	33.5	15	10	20	
9. Networking (DECNET)	1	90	-	-	90	-	-	-	5	
TOTAL	7	1,135	9	1,290	162.1	143.3	140	160	500	

* A customer is anyone who received one or more invoice from a division (or for a product line) during the period.

Source: Infonet management and INPUT estimates

days). Since this includes the time spent in selling on the part of the division's production staff, it is clearly insufficient to provide a continuous dedicated effort to what is known to be a complex task.

o   The six month forward sales forecast to the end of December this year reveals an expected order yield of f.869k or 67% approximately of the 1982 revenue forecast. Discounting a very large order prospect from the Ministry of Defence, the value of outstanding quotations required to produce this yield is f.1,675k, which gives an order hit rate of better than one in two. While this is quite credible for an organisation with as good a record as the one Infonet has in supplying to this market, it is extremely risky to continue to expect a division to survive permanently with these levels of sales success and effort.

o   Analysis of the prospect list shows that proper qualification of contacts is essential. A qualified prospect is defined as one which is:

- addressing the correct decision maker;
- referring to money to be spent in his current budget;
- in a market sector where Infonet can be confident of getting short-listed at its current prices.

-   The conclusions are inescapable that the sales effort is too low and the prospect list too long for comfort. Only the future requirements of the existing client base can be handled properly.

3.   <u>Market Forecast</u>

-    Technical Services Division represents part of Infonet's involve-
     ment in the Netherlands Professional Services market (see Appendix
     A for the definition of this and other market subsector
     terminologies).

-    Exhibit III-2 shows INPUT's five year forward forecast of this
     sector. Infonet's main component of this revenue comes from the
     Software Development subsector though there is also some involve-
     ment with Contract Programming (the Bodyshopping as it is usually
     called).

-    Bodyshopping has always been a popular contract method in The
     Netherlands and is forecast by INPUT to remain so with the present
     economic recession in the country making it unwise to accept the
     costs of extra staff. Its Average Annual Growth Rate (AAGR) is
     forecast as 20% including price inflation.

-    Education and training has the highest subsector growth rate at
     23% and this reflects the computer industry's need to train new
     recruits and to maintain the competence of its already established
     professionals. Recent industry reports have highlighted this
     requirement.

-    Software development (other than as part of a turnkey system) has
     a slower growth rate than the above two subsectors but it is
     nevertheless a healthy 15%. ARC's overall market share in 1981
     when considering both Infonet's contribution and the special soft-
     ware development undertaken by the ARC service bureaux, amounted
     to no more than 2% and this market share is likely to drop in 1982
     due to the absence of a substantial component from PTS software
     projects and the concentration of Administrative Systems Division
     on turnkey package based systems.

EXHIBIT III-2

NETHERLANDS PROFESSIONAL SERVICES MARKET FORECAST* BY SUBSECTOR 1981-1986

USER EXPENDITURE IN FL. MILLION

TYPE OF PROFESSIONAL SERVICE	1981	1982	1983	1984	1985	1986	AAGR (PERCENT)
Consultancy	88	101	114	128	142	156	12%
Software Development	310	366	424	484	542	612	15%
Contract Programming	116	145	174	205	242	286	20%
Education & Training	126	164	205	250	300	351	23%
TOTAL	640	776	917	1,067	1,226	1,387	17%

* Provisional update.

-       The conclusion is that there is considerable room for growth of
        the group's activities in this subsector but that further market
        research is required:

        -       to quantify the application area markets which TSD should
                address directly and vigorously;

        -       to investigate the overseas sales possibilities of these same
                product areas.

B.   GRAPHIC SERVICES DIVISION

o   Like TSD, the Graphic Services (Bureau) Division (GSD) of Infonet
        has its roots in the early project experiences of the company. It
        represents some of the more unusual skills to be found in a system
        house:

        - text handling, both simple and complex;
        - bibliographic database manipulation skills;
        - automated documentation facilities.

o   Since The Netherlands has a centuries old tradition of printing
        and publishing craftsmanship, this set of skills is less unusual
        in your country than in others in western Europe. What is most
        unique is to find these skills set in the heart of a general pur-
        pose systems house. Elsewhere it has been more usual to find small
        specialist processing bureaux cum software companies working in
        the fairly closed world of the printing and publishing industry
        and these have tended to be sold to companies in those industries
        at the stage when they have exhausted the possibilities for self-
        financed growth.

o   Unfortunately, the division has become, and in this respect it is
        identical to TSD, over reliant on one large customer, the Excerpta

Medica contract from Elsevier. This represents 58% of the antici-
pated 1982 revenue for the division (the corresponding figure for
ESTEC and TSD is 57%). It is also felt within Infonet that the
traditional market which it is addressing is changing and has
almost reached saturation for the current product range. In fact,
as will be discussed more fully below, the market in INPUT's view
is developing rather than drying up.

o   At the present time GSD is the largest division in terms of tur-
nover and numbers of staff. It has now got a good production head
in the person of Mr Duiker and, with increased sales effort, there
is no reason why it should not be a successful area in the busi-
ness.

1.   Product Areas

o   There are three main types of work executed by the Graphics
Service Bureau;

-       photo-composition starting with a customer's machine-readable
        input (eg diskette, tape, cassette, etc) - draai-orders;

-       photo-composition starting from manuscript or typed text pro-
        vided by the customer - zet-orders;

-       compilation of more complex types of reference book which
        require cataloguing, indexing and access to and manipulation
        of associated databases - asip-orders.

o   Certain services such as page make-up and sub-contracted printing
may be included in customer contracts for any of the above cate-
gories of work.

-       Excerpta Medica is a large outgoing database editing con-
        tract.

- Besides this type of work there is the listing and address handling service which is marketed principally to membership organisations.

- Exhibit III-3 illustrates the breakdown of the division's activities under the product areas which require to be addressed by the sales and marketing organisation, giving details on:

  - revenues and underlying customer bases in 1981 and 1982;

  - sales efforts expended over the same periods;

  - market factors indicating:-

    . potential universe of customers,

    . degree of competition.

- Important features which need to be noted in connection with the future marketability of the products are:

  - the number of competitors for draai- and asip-orders is small but so is the universe of customers;

  - for these types of order Infonet's comparatively high pricing is not the key factor in securing the business;

  - the large number of competitors for zet-orders is counter balanced by the large universe of prospects; however this is therefore a volume-market which will be more price-sensitive than the other sectors.

DIVISION : GRAPHICS SYSTEMS

PRODUCT/SERVICE	No. of Customers 1981	Revenue (f.k) 1981	Expected no. of Customers (1982)	Estimated Revenue (f.k) 1981	Average Revenue per customer (f.k) 1981	1982	No. of sales days allocated 1981	1982	Estimated Potential Customers in Netherlands	Estimated No. of Competitors
1. Excerpta Medica	1	2,390	1	2,500	2,390	2,500	-	-	1	3
2. Draai-Orders	1	82	-	-	13	5	30	50	500	20
	8	34	10	50						
3. Zet-Order	1	675	1	450	35	18.5	210	150	50,000	1,000
	1	285	1	150						
	32	228	50	360						
4. Asip-Order	13	379	15	425	50	28	60	180	150	4
	1	320	-	-						
5. Membership Administration	-	-	1	200	-	200	-	-	10,000	25
6. Other	1	395	1	150	395	150	-	20	-	-
TOTAL	59	4,788	80	4,285	81.2	53.6	300	400	60,000	80

Sources: Infonet Management
INPUT Estimates

2.   Sales Forecast

o   Exhibit III-4 shows an analysis of the current prospect list
        through to the end of 1982. If all these orders come in another
        f.890 thousand will be added to the order book, ie 21% of the 1982
        revenue estimate. Without the reassurance of the Excerpta Medica
        contract this would be an unacceptable six-monthly order yield.

o   This list contains thirty-seven prospects with an average order
        value of f.24,000. Excluding the Excerpta Medica contract, the
        average customer revenue yield for 1982 is around f.22,000. This
        shows that with the single large account on the books the annual
        revenue can be made up by about eighty orders per year with this
        average size somewhere between f.20,000 and f.25,000. If the large
        contract is removed, it must be replaced by another eighty to one
        hundred orders. In other words the sales effort will be increased
        by almost a factor of two.

o   Since between fifteen and twenty quotations are being processed
        each month, a sales force of three persons (which approximates to
        the present situation) will be just adequate to meet current
        requirements. However, pre-sales support must be forthcoming from
        within the production units in order to increase the effective
        selling time   of the force.

o   Each sales person then:

        - prepares five to eight quotations per month;

        -       closes an average of two sales each month, giving an
                order book increment of f.50,000 (or f.300,000 in a half
                year and f.600,000 in a full year).

o   Assuming a quotation remains outstanding for three months there
        will be between forty-five and sixty in the pipeline at any one

EXHIBIT III-4

ANALYSIS OF GSD PROSPECT LIST

TYPE OF ORDER	DRAAI-			ZET-			ASIP-			TOTAL		
TYPE OF CUSTOMER	No. of Orders	Value in f.k Total	Average	No. of Orders	Value in f.k Total	Average	No. of Orders	Value in f.k Total	Average	No. of Orders	Value in f.k Total	Average
Printers	-	-	-	-	-	-	3	388.0	129.3	3	388.0	129.3
Publishers	3	11.5	3.8	15	143.2	9.6	2	92.0	46.0	20	246.7	12.3
Other Companies	5	165.5	33.1	3	38.0	12.7	-	-	-	8	203.5	25.4
Public Organisations	4	32.5	8.1	-	-	-	1	4.0	4.0	5	36.5	7.3
Membership Associations	-	-	-	1	12.0	12.0	-	-	-	1	12.0	12.0
TOTAL	12	209.5	17.5	19	193.2	10.2	6	484.0	80.7	37	886.7	24.0

time and therefore each salesman will be handling a number between fifteen and twenty. This is on the limit of the feasible when one remembers that there are unqualified prospects and future canvassing to be dealt with in parallel. If and when the Excerpta Medica contract expires, the sales strategy for this sector will have to be based differently. Since contingency plans for this eventuality must be laid now, INPUT's views on the approach to be taken will be given later in this report.

3. Market Forecast

o   Since the text processing, database compilation and photo-composition market is a specialist one, it tends to be swamped in any overall forecasts for the processing services market. Exhibit III-5 has therefore been derived independently of INPUT's general forecast for The Netherlands service bureau market, which is included elsewhere.

o   The forecasts given in this exhibit show that the 1981 market share of zet-orders at 85% will fall to 78% in 1986 due to its negligible real growth rate. Asip-orders will expand steadily but not dramatically due to the relatively slow growth of database orientated publications, compared to the growth in factual databases. Draai-orders, which originate from in-house computer installations, will have the fastest growth rate of the three kinds at 21% AAGR.

o   The analysis of the prospect list in Exhibit III-4 affords some useful pointers for the conduct of the sales and marketing effort:

    -   asip-orders are to be found being issued by printers who may not have the necesary sophisticated database manipulation expertise in their own resources;

EXHIBIT III-5

SIMPLIFIED FORECAST OF GRAPHICS SERVICES MARKET 1981-1982

TYPE OF ORDER	MARKET VALUE 1981 - fl. million -	AAGR (Percent)	MARKET VALUE 1986 - fl. million -
Draai-Order	2.0	21%	5.2
Zet-Order	50.0	5%	63.8
Asip-Order	3.0	17%	6.6
Other Work (eg Membership Administration)	3.5	13%	6.4
TOTAL	58.5	7%	82.0

* Source: Input estimate.

EXHIBIT III-5

SIMPLIFIED FORECAST OF GRAPHICS SERVICES MARKET 1981-1982

TYPE OF ORDER	MARKET VALUE 1981 - fl. million -	AAGR (Percent)	MARKET VALUE 1986 - fl. million -
Draai-Order	2.0	21%	5.2
Zet-Order	50.0	5%	63.8
Asip-Order	3.0	17%	6.6
Other Work (eg Membership Administration)	3.5	13%	6.4
TOTAL	58.5	7%	82.0

* Source: Input estimate.

- publishers are the biggest source of standard zet-orders and also at present the most likely source to provide orders of all types (54% of orders in number but only 28% in value);

- draai-orders emanate from private companies and public service organisations, but the larger ones come from private organisations, with marketing or educational requirements;

- membership organisations are a relatively untapped subsector.

C.   ADMINISTRATIVE SYSTEMS DIVISION

o   The Administrative Systems Division of Infonet (ASD) is the third and youngest of the company's three areas of business. Its development as a division has been an unhappy one, culminating in the closure of the Apeldoorn office in May this year and the loss of staff involved in the decision.

o   Infonet may console itself that it is not the only company that has found it difficult to make profits out of mini computer-based small business systems. However, it is very necessary to draw the right lessons from what can then have been a salutary experience. The attitude to be avoided is that, because some ventures are bound to fail, "we just didn't chose the right ventures".

o   INPUT is of the view that the principal reason for the lack of success with business systems has been:

- that Infonet did not envisage the venture as a true marketing exercise, with all the necessary research, planning and product development which that entails.

o   Prior to the company's entry into the turnkey business systems market, Infonet had been content to sell itself on a project basis

as a systems house. Along with other companies in this field, it no doubt began to believe that market factors would not allow it to continue to sell on the basis of a single customer bearing the complete development costs of this system. Hence the need to introduce repeatability into the product catalogue.

o   It should by now be clear that the mini-computer revolution, which first brought a new and more compact generation of equipment to the market in the late 1960's, was driven by the hardware manufacturers as much for the benefit of their growth targets as for the convenience of the new customer base who 'clamoured' for the latest in business systems. The proximity of the computing services industry to the down-to-earth needs of enterprises has rendered it, and will continue to do so, vulnerable if it operates in the turnkey business sector without fully professional product marketing.

o   What makes the problem even more difficult is the degree to which the business system user is willing or able to pay for those features of his requirements which demand special treatment. Hence the importance of getting the balance right between the standard or basic components of a turnkey system and the tailored or additional facilities whose provision may vary in the eyes of the customer from being important, to being attractive if cheap, to being irrelevant. This theme will be dealt with more fully later under the heading of the interface between product development and sales.

1.   Product Areas

o   Details of fifteen different products or product areas were examined, as shown in Exhibit III-6. These products were then classified according to whether they:

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EXHIBIT III-6

INFONET ADMINISTRATIVE SYSTEMS DIVISION

SOFTWARE SYSTEMS

Farao   : Universeel Uitgebreid Financieel Pakket

Hannibal   : Universeel Uitgebreid Handels Pakket

Infotekst   : Universeel Tekstverwerkingspakket

Notar   : Specifiek Notaris Pakket
                                 Aktenverwerking
                                 Tekstverwerking
                                 Financiele Administatie

Indos   : Specifiek Pakket voor Schade Expertise Bureaus

Horatius   : Urenverantwoordingspakket voor
                                 grote Accountantskantoren
                                 Organisatie/Advies Bureaus
                                 Architecten Bureaus

Uitgeverspakket   Specifiek administratiepakket
                                 voor de grotere Uitgevers

Vleesgroothandelspakket   Specifiek administratiepakket
                                 voor de vleesgroothandel

Ledenadm. pakket   Ledenadministratie voor zowel grote
                                 als kleine organisaties bestaande uit
                                 - ledenadministratie
                                 - Tekstverwerking en
                                 - Fin. Administratie

Administratiepakket t.b.v. Internationale Verhuisbedrijven

Formatext   : Data Entry

Salamo

Philips PTS 6000/8000

TMS

ASIP

-       were in an important specialist area;

-       had been developed as packages or in a tailored version;

-       were addressed to specific industry markets (vertical
        products) or to cross-industry functional areas (horizontal
        products).

o   The result of this analysis was to chose six definite product
        areas, and to analyse the division's activities under these
        headings:

-       two specialist areas:-

        .   text and word processing systems,

        .   PTS and banking systems;

-       four general business product areas:-

        .   packages - vertical and cross-industry,

        .   tailored systems - vertical and cross-industry.

o   A fair proportion of unclassifiable work has been put in a seventh
        miscellaneous product area. It could well be possible to sort some
        of this work into one or other of the other categories but the
        information required to do so was not to hand at the time of
        writing.

o   Exhibit III-7 summarises some of the key data relating to the
        current and recent operation of the division in the same format as
        that of TSD and GSD. Important points to note here are:

DIVISION : ADMINISTRATIVE SYSTEMS

Staff nos: Production - 30
Sales - 3
Other - 1
Total - 34

PRODUCT/ SERVICE	No. of Customers 1981	Revenue (f.k) 1981	Expected no. of Customers (1982)	Estimated Revenue (f.k) 1982	Average Revenue (f.k) per customer 1981	1982	No. of sales days allocated 1981	1982	Estimated Potential Customers in Netherlands	Comment
1. Text systems and Word Processing	11	559	2	160	50.8	80.0	NK	NK	6,500	
2. Banking & PTS systems	10	1,586	-	-	158.6	-	NK	NK	150	
7. Other and miscellaneous	-	805	12	911		75.9	NK	NK	NA	
3. Business systems - packages (x - industry)	6	139	-	-	23.2	-	NK	NK	2,000	
4. Business systems - packages (vertical)	3	145	9	820	48.3	91.1	NK	NK	4,000	
5. Business systems - tailored (x - industry)	1	261	3	465	261.0	155.0	NK	NK	1,000	
6. Business systems - tailored (vertical)	3	352	7	695	117.3	99.3	NK	NK	1,050	
TOTAL	34	3,847	33	3,051	113.1	92.4	NK	600	14,700	

* A customer is anyone who received one or more invoices for a given product line during the period
Sources: Infonet management and INPUT estimates

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- the traditional text systems are not being sold as much in 1982 as in 1981, though some of the business system products incorporate text or word processing modules;

- PTS and banking systems are not being pursued in spite of the facts that:-

    . the target buying points are relatively few in number, 150 compared to the thousands for any of the other areas,

    . the company has a bank shareholder/parent company with all the necessary background expertise to tackle this market;

- cross-industry packages are not being sold though some tailored project work is targeted;

- the vertical systems, both package and tailored, are estimated to have a larger target market than their cross-industry equivalents, because the sales plan is to sell the latter in conjunction with the former and therefore their main function is to increase the number of companies likely to buy the vertical market approach.

2.   <u>Sales Forecast</u>

o   The forecasts to the end of 1982 were studied and used to derive
     some of the statistics given in the above exhibit.

o   The present prospect list gives rise to the possibility of thirty-
     two systems being sold by the end of the year. Since only two
     systems have been signed up so far, one is entitled to question
     the confidence behind this plan. INPUT believes that Infonet is
     still not ready to operate in this market area because:

     -    proper market research, aimed at quantifying and qualifying
          the markets under attack has not been undertaken;

     -    the senior production staff express reservations about the
          ability of the existing marketing unit to sell 'with profit'
          systems;

     -    the sales staff do not have the correct back-up material and
          supporting facilities - documentation, demonstration systems,
          good reference sites.

o   At this stage Infonet is in danger of throwing good money after
     bad in continuing to put sales effort into this area. INPUT is
     going to recommend that, with certain qualified exceptions, the
     Infonet part of the ARC group should cease to trade in this area,
     since the group is also trading in this market in other parts of
     its organisation:

     - ARC Busicare and ELAN Busicare systems.

      Until such time as a rational policy has been hammered out, this
     product must be put back into the hands of a development group if
     the ARC organisation is to continue to be effective in it.

3. <u>Market Forecast</u>

o   The market forecasts which cover this product area are:

    -   turnkey systems;

    -   software development for business systems, which has already
        been shown under Professional Services.

o   Neither of the forecasts go into sufficient detail for the pur-
    poses of highlighting quantified opportunities in the fifteen pro-
    ducts which were studied. It is for this reason that INPUT
    recommends that further research is carried out into those commer-
    cial products which survive the screening applied in the next
    chapter, when the products are qualified from a variety of dif-
    ferent angles.

o   At this point it is sufficient to say that the market for small
    business systems:

    -   is growing;

    -   is mainly national in character;

    -   is at present excited about the possibilities of the
        micro-computer;

    -   mini systems are regarded (not necessarily with total
        justification) as 'previous generation's 'up-market' or
        'scientific and technical information engines'.

D.   OVERLAP WITH ARC PRODUCTS AND SERVICES

o   The overlap between ARC and Infonet products occurs in the area of small business systems, supplied on a turnkey basis. Both at ARC's main division at Amstelveen and in the ELAN subsidiary at Enschede, turnkey solutions have been offered and supplied; mainly on standard cross-industry applications i.e. with the different models of the BUSICARE system, but also to some extent in the vertical market sector mode with the MEDICARE products. INPUT understands that these latter have now been withdrawn from the market for reasons of:

-     Difficulty in making sales
-     Dissatisfaction with profitability.

o   Comparison of the amounts of revenue earned in the small business systems area in the three centres shows the following:

	1981 revenue in f. thousand	1981 revenue as a % of all work in the centre
- Infonet	897	9.2%
- ARC	586	3.0%
- ELAN	531	13.6%
- All centres	2,014	6.1%

o   The above revenues are calculated to include software and the hardware margin on turnkey systems, other than text and word processing systems.

The equivalent figures anticipated for 1982 are:

	1982 revenue	% of all work	% growth 1982/1981
- Infonet	1,980	23.0%	121%
- ARC	100	0.5	-83
- ELAN	300	7.5	-44
- All	2,380	7.3%	18%

The Infonet figure, however, reflects the previously mentioned optimistic sales plan for ASD.

Of the three centres, ELAN would appear to have the most satisfied customer base, followed by the ARC base which has previously been somewhat unhappy with the capability provided by the early (Datapoint-based) systems. Infornet has still to establish a reputation in this area.

The figures show that the commercial service bureau side of the ARC group were in 1981 doing the greater percentage of work in the small turnkey systems area (f. 1117 thousand against Infonet's f.897 thousand) and that in 1982 this position is being completely reversed.

Different types of hardware have been used to support these systems. The following manufacturers' systems require support and maintenance in the installed based:

- Infonet systems: Digital (DEC), Hewlett-Packard (H-P)
- ARC   : Datapoint, H-P
- ELAN   : Computer Technik Mueller (CTM).

INPUT understands that a recent decision has been taken to sell from now on only those systems which can be offered on DEC equip-

ment. While appreciating this move towards a more coherent
approach to the small business systems market, INPUT is not of the
opinion that it is anything more than a palliative measure in a
very serious situation facing the group over the business conduct
of its operation in this, one of the most competitive of d.p.
markets today. A more radical approach is required without delay.

IV. <u>QUALIFICATION OF INFONET PRODUCTS</u>

A. METHODOLOGY AND RESULTS

o In order to bring some form of measurement to the problem of
determining which Infonet products should be promoted in future,
INPUT devised a simple method of rating the existing products and
services or according to a number of characteristics. Ratings
were awarded on a scale ranging from 1 = Poor to 5 = Very good.

o The characteristics used were grouped into four categories:

- Marketing characteristics
- Selling
- Production
- Management.

o A weighting factor (or weight W) was assigned to each charac-
teristic according to how important it was judged to be in the
overall assessment of the product. A weight 1 is Low importance,
2 is Medium and 3 is High. Rating and weight were multiplied
together for each characteristic, and summed over each category of
characteristic (Marketing,.....etc) and for the whole product.

o Marketing characteristics related to the product's (or service's)
ability to live in the marketplace and feed revenue to its spon-
sors. Four characteristics were used:

- Compliance with market needs, indicating the goodness of fit
  between the product's facilities and the average expectations
  among users from a product of the kind,

- Duration of the product's life; rating here in general would
  be high for a young product and low for an old one, though
  some allowance was made if a young product was in the stage of
  teething problems,

- Number of potential sales in the Netherlands, indicating the size of a product's market,

- A pricing factor - high for an expensive product and low for a cheap one, indicating the contribution of the product to the revenue (and hence the survival and growth) of the group.

o The marketing products were given respectively the weighting factors:- 2, 2, 3 and 1.

o Five selling characteristics were used to rate the product's ability to be sold:

- Ease of identification of target market sectors,

- How simply the product can be understood, explained and therefore sold by the field salesforce,

- How well the product provides user savings and other benefits,

- The quality and supply of documentation both technical and commercial, and of other aids like presentation and demonstration kits,

- Finally, and, most important of the selling features, the 'track record' in terms of:- number of sites sold, number of years on the market, generally, the satisfaction of the customer base.

o Weightings applied to the above were:- 1, 2, 2, 2, 3.

o Five Production characteristics were likewise rated. These related mainly to the products ability to be produced at a profit, but in some instances e.g. enhanceability, also affect the future of sales in the product area in question. Characteristics used were:

- How easy customer requirements can be understood (and, by implication, therefore satisfied at a profit),

- How easily the product can be maintained,

- How enhanceable, in future, is it,

- The quality of the product's implementation,

- What depth of experience does the company have in terms of people.

o   Weightings used were:- 2, 2, 2, 3, 1.

o   Two management factors were applied with weights of 2 and 3 respectively:

- How well the product fits into the overall company plan, 'coherence' factor,

- Its potential profitability.

o   The choice of rating factors was governed by the need to strike a balance between the group's abilities:

- To sell particular products,

- To make profits by selling them.

o   The results of the assessments are shown on the three Exhibits IV-1, IV-2 and IV-3, for each of the three Infonet divisions:

- TSD with 12 products or project areas
- ASD with 15 products
- GSD with 5 services.

INFONET - DIVISION, TECHNICAL SYSTEMS

Product or Service — Characteristics	W	CAD GRAPHICS DATA MANAGEMENT R	S	IMAGE PROCESSING R	S	LABORATORY TESTING R	S	TRAFFIC CONTROL R	S	GAS-FLOW + PROC. CONTROL R	S	CAD GENERAL R	S	VICON R	S	RESEARCH INTO SOFTWARE R	S	VAX KNOW-HOW R	S	INSTRUMENTATION -BASED R	S	FAILSAFE SYSTEMS R	S	NET... e.g. R
Marketing																								
1. Compliance with market needs	2	4	8	4	8	4	8	3	6	4	8	1	2	3	6	2	4	4	8	2	4	4	8	3
2. Product life – duration	2	4	8	5	10	3	6	2	4	4	8	2	4	3	6	4	8	4	8	4	8	3	6	2
3. No. of potential sales in Netherlands	3	1	3	2	6	2	6	3	9	2	6	4	12	3	9	2	6	3	9	4	12	3	9	3
4. Pricing factor i.e. contribution to revenue	1	3	3	4	4	5	5	3	3	4	4	2	2	3	3	3	3	3	3	2	2	3	3	3
Subtotal – (max. score)	40		22		28		25		22		26		20		24		21		28		26		26	
Selling																								
1. Easy to identify target markets	1	1	1	3	3	3	3	3	3	3	3	4	4	2	2	1	1	4	4	3	3	1	1	2
2. Easy to understand and explain; sell	2	3	6	3	6	3	6	3	6	3	6	3	6	3	6	2	4	3	6	2	4	3	5	3
3. Easy to show customers cost/benefits	2	2	4	3	6	3	6	3	6	4	8	4	8	2	4	2	4	2	4	4	8	3	6	3
4. Well provided with aids and documentation	2	3	6	4	8	4	8	3	6	3	6	1	2	3	5	3	6	3	6	2	4	2	4	3
5. Track record – no. of sites, years marketed, satisfaction	3	2	6	2	6	4	12	3	9	2	6	1	3	2	6	2	6	4	12	2	6	3	9	3
Subtotal	50		23		29		35		24		29		23		24		21		32		25		26	
Production																								
1. Requirements easy to understand	2	3	6	3	6	2	4	3	6	3	6	3	6	4	8	2	4	3	6	3	6	3	6	2
2. Good design – maintainable	2	4	8	4	8	3	6	3	6	3	6	2	4	3	6	3	6	3	6	2	4	2	4	3
3. – enhanceable	2	2	4	3	6	3	6	3	6	4	8	2	4	4	8	1	2	4	8	3	6	3	6	3
4. Good implementation	3	4	12	4	12	4	12	3	6	3	9	3	9	3	9	3	9	3	9	3	9	4	12	4
5. Plenty experience/ expertise	1	4	4	4	4	4	4	4	4	3	3	1	1	2	2	2	2	4	4	2	2	3	3	3
Subtotal	50		34		36		32		28		32		24		33		23		33		27		31	
Management																								
1. Coherence – i.e. fits company plan	*2	3	6	3	6	2	4	1	2	2	4	3	6	4	8	3	6	3	6	3	6	2	4	4
2. Profitability	3	3	9	3	9	4	12	4	12	4	12	2	6	3	9	4	12	4	12	2	6	4	9	≈3
Subtotal	25		15		15		16		14		16		12		17		18		18		12		13	
TOTAL	165		∵4		108		104		X88		103		X79		98		X83		111		90		96	

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DIVISION:- ADMINISTRATIVE SYSTEMS
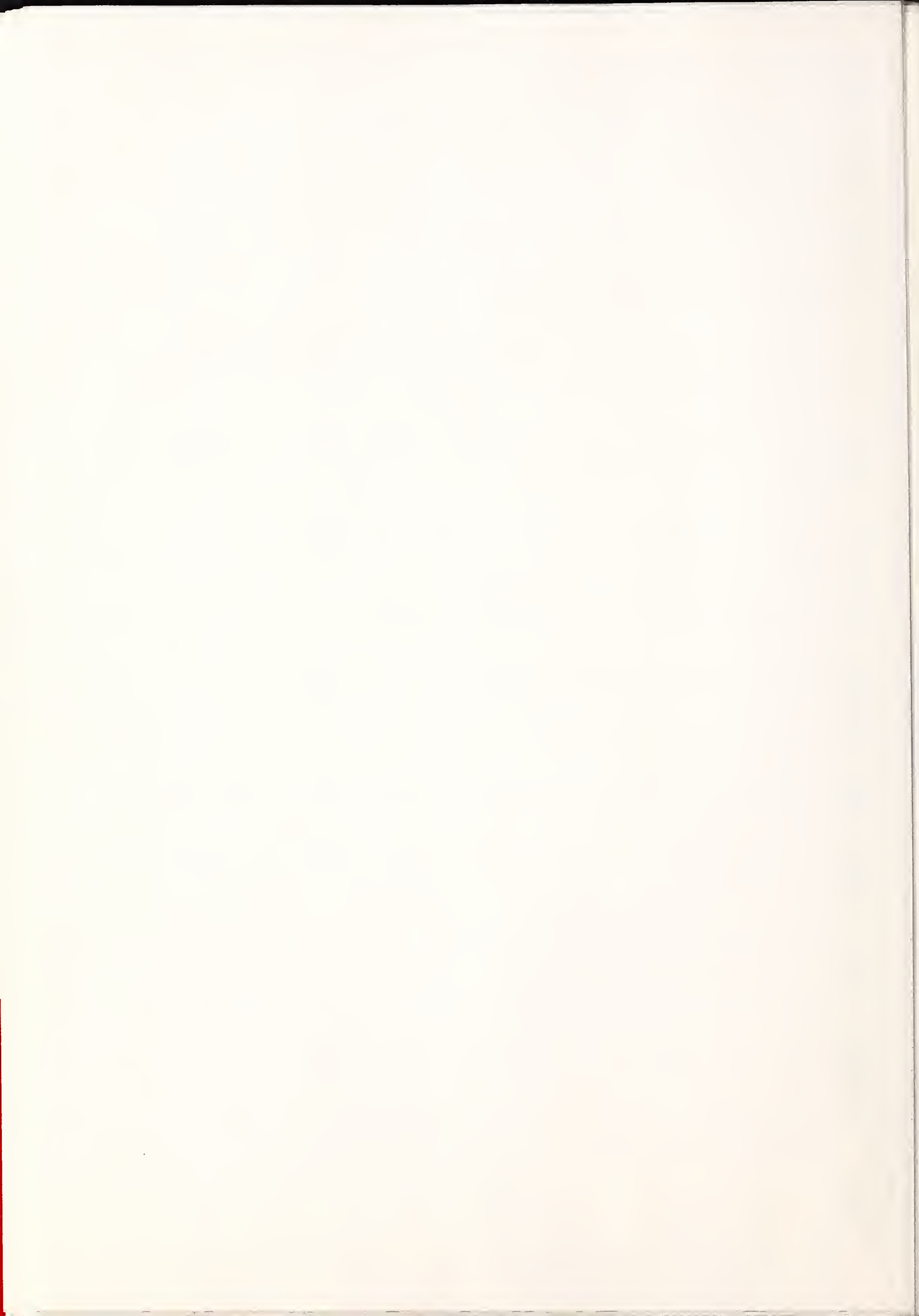
Product evaluation matrix (R = Rating, S = Score). Systems grouped as TEXT SYSTEMS (FORMATEX, TMS*, ASIP*, INFOTEKST*), BANKING BUSINESS SYSTEMS (PTS SYSTEMS, FARAO [XP], SALAMO, HANNIBAL [VP]), and others (HORATIUS, NOTAR, LEDERADM [XT], INDOS [VT], UITGEVERS, VLEESGROOT-HANDEL, VERHUIS BEDRIJVEN).

Product or Service Characteristics	W	FORMATEX R	S	TMS R	S	ASIP R	S	INFOTEKST R	S	PTS SYSTEMS R	S	FARAO R	S	SALAMO R	S	HANNIBAL R	S	HORATIUS R	S	NOTAR R	S	LEDERADM R	S	INDOS R	S	UITGEVERS R	S	HANDEL R	S	BEDRIJVEN R	S
Marketing																															
1. Compliance with market needs	2	5	10	4	8	3	6	4	8	4	8	4	8	3	6	3	6	3	6	4	8	3	6	4	8	3	6	2	4	3	6
2. Product life - duration	2	4	8	3	6	3	6	3	6	4	8	2	4	2	4	3	6	4	8	3	6	3	6	4	8	2	4	3	6	2	4
3. No. of potential sales in Holland	3	2	6	3	9	3	9	4	12	2	6	3	9	3	9	4	12	3	9	3	9	3	9	2	6	3	9	2	6	2	6
4. Pricing factor i.e. revenue contribution	1	4	4	3	3	3	3	3	3	4	4	2	2	2	2	3	3	3	3	4	4	3	3	4	4	3	3	3	3	3	3
Subtotal - (max. score)	40		28		26		24		29		26		23		21		27		26		27		24		26		22		19		19
Selling																															
1. Easy to identify target markets	1	2	2	2	2	2	2	4	4	2	2	2	2	2	2	3	3	4	4	4	4	4	4	5	5	4	4	4	4	3	3
2. Easy to understand and explain; sell	2	4	8	4	8	3	6	4	8	2	4	3	6	3	6	3	6	3	6	3	6	3	6	2	4	3	6	2	4	3	6
3. Easy to show cost/benefits	2	4	8	3	6	3	6	3	6	3	6	3	6	3	6	2	4	2	4	2	4	2	4	3	6	3	6	3	6	2	4
4. Provided with aids and documentation	2	3	6	3	6	2	4	3	6	2	4	4	8	3	6	2	4	2	4	2	4	2	4	2	4	2	4	2	4	1	2
5. Track record - no. of sites, years marketed, satisfaction	3	3	9	1	3	1	3	3	9	4	12	1	3	1	3	1	3	1	3	2	6	3	9	2	6	1	3	1	3	1	3
Subtotal	50		33		25		21		33		28		25		23		20		21		24		27		25		23		21		18
Production																															
1. Requirements easy to understand	2	3	6	3	6	2	4	4	8	3	6	4	8	4	8	3	6	3	6	3	6	4	8	2	4	3	6	3	6	3	6
2. Good design - maintainable	2	4	8	3	6	3	6	3	6	4	8	2	4	3	6	2	4	4	8	3	6	3	6	3	6	2	4	2	4	2	4
3. Good design - enhanceable	2	3	6	2	4	3	6	2	4	4	8	1	2	1	2	3	6	3	6	3	6	3	6	3	6	3	6	3	6	2	4
4. Good implementation	3	4	12	4	12	3	9	4	12	3	9	3	9	3	9	2	6	3	9	3	9	3	9	2	6	3	9	3	9	3	9
5. Plenty of experience and expertise	1	4	4	2	2	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	3	3	3	3	1	1	3	3	2	2
Subtotal	50		36		30		28		33		34		26		28		24		31		29		32		25		26		28		25
Management																															
1. Coherence - i.e. fits company plan	2	5	10	3	6	4	8	5	10	4	8	1	2	1	2	1	2	2	4	3	6	4	8	2	4	3	6	2	4	2	4
2. Profitability	3	3	9	3	9	3	9	3	9	4	12	2	6	2	6	2	6	2	6	2	6	2	6	3	9	1	3	2	6	2	6
Subtotal	25		19		15		17		19		20		8		8		8		10		12		14		13		9		10		10
TOTAL	165		116		96		90		114		108		X82		X80		X79		X88		92		97		X89		X80		X78		X72

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Product or Service Characteristics	W	EXCERPTA MEDICA R	EXCERPTA MEDICA S	DRAAI R	DRAAI S	ZET R	ZET S	ASIP R	ASIP S	MEMBERSHIP ADM. R	MEMBERSHIP ADM. S
Marketing											
1. Compliance with market needs	2	4	8	4	8	3	6	3	6	3	6
2. Product life – duration	2	2	4	4	8	3	6	5	10	3	6
3. No. of potential sales in Holland	3	1	3	3	9	5	15	2	6	4	12
4. Pricing factor i.e. revenue contribution	1	5	5	4	4	2	2	4	4	3	3
Subtotal – (max. score)	40		20		29		29		26		27
Selling											
1. Easy to identify target markets	1	4	4	3	3	2	2	2	2	4	4
2. Easy to understand and explain; sell	2	3	6	4	8	3	6	3	6	4	8
3. Easy to show cost/ benefits	2	3	6	3	6	2	4	4	8	3	6
4. Provide with aids and documentation	2	4	8	4	8	4	8	4	8	3	6
5. Track record – no. of sites, years marketed, satisfaction	3	4	12	4	12	3	9	4	12	4	12
Subtotal	50		36		37		29		36		36
Production											
1. Requirements easy to understand	2	4	8	4	8	4	8	3	6	3	6
2. Good design – maintainable	2	4	8	4	8	3	6	3	6	3	6
3. – enhanceable	2	4	8	4	8	3	6	5	10	4	8
4. Good implementation	3	4	12	4	12	4	12	4	12	3	9
5. Plenty of experience and expertise	1	4	4	4	4	4	4	3	3	4	4
Subtotal	50		40		40		36		37		33
Management											
1. Coherence – i.e. fits company plan	2	4	8	4	8	3	6	4	8	4	8
2. Profitability	3	3	9	3	9	3	9	2	6	3	9
	25		17		17		15		14		17
TOTAL	165		113		123		109		113		113

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o   This ranking of products is an attempt to separate the good products from the not so good. It suffers from the fact that the ratings are applied by the INPUT consultant, and are to that extent subjective. It therefore represents an informed opinion not an absolute objective measure, which it does not claim to be. The method can be refined and the results cross-checked by:

    -    Revising or improving the characteristics used,

    -    Taking a sample of different people's assessments within the company.

o   The key to the method is the four categories of characteristics which give a balanced overall picture of a product's or service's potential.

o   INPUT believes that any product gaining a rating below 90 (out of the total possible score of 165) should not be actively marketed in its present form.

o   Among the 12 TSD products, the ranking is:

    - VAX know-how
    - Image processing
    - Laboratory testing
    - Gas-flow and other process control
    - Networking
    - VICON
    - Fail-safe systems
    - Graphics data management
    - Micro-based instrumentation.

o   Falling below the 90 'pass mark' were:

    - Traffic control
    - Research into software
    - General CAD capability/systems.

o   The 15 ASD products do not emerge well from the screening, mainly
due to their poor performance in the Management and Selling
categories.

o   The seven which passed the 'filter' are:

- Formatext
- Infotekst
- PTS systems
- Ledenadministrative
- TMS
- Notar
- ASIP.

o   Indos and Horatius were only marginally below the threshold of
acceptability.

o   All the products which failed to make the grade are in the
Business Systems area.

o   The five Graphics Services areas are all safely past the eva-
luation with good scones.

B.   ELEMENTS OF PRODUCT GROUP COMBINATIONS

o   Products may be grouped together into families or product groups
for a number of reasons:

- Marketing may require comprehensible and imaginative sets of
products with which to project the company image,

- Sales will be significantly improved if the salesforce can be
structured around products which are well known to each group
of salesmen and which can therefore be sold quickly and
effectively,

- Production is the most obvious area for specialisation and this affects profitability quite directly,

- Management will tend to group products according to criteria afforded by the business operating ratios, e.g.

  . To make business units of a viable size,

  . To increase financial control in profit centres.

o   It must be remembered that these reasons do not always lead to the same sets of products. Conflicts arise between one way of looking at it and another. For instance, profit might dictate that all membership administration activities are furthered in one marketing unit, but salesmen with knowledge of the different but kindred products and services are scattered around the group's establishments and it thus becomes difficult to centralise the selling and support efforts. Compromises must therefore be found, and in today's ever-improving range of communications devices, technology must be used to this end.

o   The Infonet projects can be analysed by division and by marketing type to suggest certain possible new groupings. Exhibits IV-4 and IV-5 do this for the three divisions, introducing the following factors:

- Vertical vs. applicational vs. functional types of product,
- Target industries,
- possibilities for overseas or international interest.

o   The single figures in brackets next to the Target Industries on the above charts indicate certain possible industry-specific groupings:

EXHIBIT IV-4

ANALYSIS OF TSD PRODUCTS BY TYPE

	Interest Overseas	Target Industries
A. VERTICAL		
. Gas-flow and other process control	Yes	(1) Process manufacturing Energy
. Laboratory testing	Yes	(1) Research institutes Energy Manufacturing
B. APPLICATIONAL		
. Graphics database management	Yes	Manufacturing Energy Research institutes
. Microcomputer based instrumentation	Yes	(1) Process manufacturing Energy, Engineering
. VICON	-	(2) Banking and other financial communications
. Image processing	Yes	(1) Defence Aerospace Engineering, Energy
C. FUNCTIONAL		
. VAX know-how	Possibly	most of the above
. Fail-safe systems	Possibly	(2) Banking, insurance Airline and other transportation
. Networking	Possibly	(2) Banking, insurance Airline and other transportation

EXHIBIT IV-5

ANALYSIS OF ASD AND GSD PRODUCTS BY TYPE

ASD	Interest Overseas	Target Industries
A. VERTICAL		
. Hannibal	-	Wholesale distribution
. Horatius	-	Professional Services
. Notar	-	Professional Services
. Indos	Yes	(2) Insurance
. Uitgevers	-	(3) Publishing
. Vleesgroothandel	-	Wholesale distribution
. Verhuisbedrijven	-	Transportation
. Ledenadministratie	-	Other services
B. APPLICATIONAL		
. Farao	-	-
. Salamo	-	-
. PTS	Yes	(2) Banking, Insurance and Government
. Formatext	Yes	(3) Publishers, Communications
. Infotekst	-	-
. TMS, ASIP	-	(3) Publishers
C. FUNCTIONAL		
. PTS	Yes	All large organisations

GSD		
A. VERTICAL		
. Excerpta Medica	Yes	(3) Publishers
. Membership Administration	-	Other services
B. APPLICATIONAL		
. Draai	Possibly	Manufacturing
. Zet	Possibly	(3) Publishers
. Asip	Yes	(3) Printers

- (1) = the High Technology industries,
- (2) = Banking, Insurance and other financial bodies,
- (3) = Publishing, Printing, Communications and Information Technology.

o   Grouping existing products in a logical way may be a useful internal exercise; it is no substitute for an outgoing approach to the new markets of the day. These are determined by competitors and particularly by the market leaders.

o   Office automation and the integration of text, data and image processing is a prime market of the late 1980s.

o   Advanced banking systems, integrating accounting and dealing systems, are a prime international market of the present. Banking is becoming more international, and in these days of world economic stagnation, its profitability and its management control systems are in need of upgrade.

o   On-line database enquiry systems, using proprietary, public or Euronet access networks are starting to get underway in Europe though they have a long way to go to catch up with the U.S.A. in sophistication.

o   Infonet has some of the elements necessary to win a position in these markets. Entry, if it is going to be made, must be carefully planned and rehearsed if a foothold gained is to be held and developed as a major plant in the group's future strategy.

V   <u>INTEGRATION INTO THE ARC GROUP</u>

A.   THE ARC BUREAU SERVICES

o   The ARC-Group is dominated by the revenues earned in the bureau
        services area under the company names of ARC and ELAN.

o   INPUT's 1980 analysis of the Netherlands computer services
        industry placed ARC number 3 in the table of bureaux serving the
        batch services market, behind only CVI and CEA. That rating was
        based on 1979 revenues. Since those results were published ARC
        has continued to improve its penetration of the Remote Computing
        Services (RCS) market, particularly with the acquisition of
        approximately 40 customers on the COCOS transaction processing
        businces system.

o   However the group remains with a large proportion of its revenue
        in the traditional service areas of:

        -    Wage and salary processing (payroll)
        -    Financial Ledger systems.

o   This year there are an increasing number of customers wishing to
        transfer from a batch delivery mode to an on-line or remotely con-
        nected mode, and this offers some hope for future stability of the
        work-load. On the other hand competition is stiffening in the RCS
        area, and sales of COCOS are not going to be easy to make in
        future because of a variety of reasons:

        -    COCOS is a fairly complex system to sell,

        -    Competition on price will get fiercer,

        -    The cost of telecommunications does little to aid sales,

-   The modern trend is to place intelligence away from the
    central site in RCS - this delivery mode has been given the
    unwieldy name of User Site Hardware Services (USHS) - see
    Appendix A for a full definition,

-   Users will expect a continuing programme of upgrades and
    enhancements in the COCOS service and this kind of investment
    has to be budgetted for both in terms of production and
    marketing.

o   Exhibit V-1 summarises the data on the ARC-Group which was pre-
    viously given for each of the Infonet divisions. A very marked
    contrast is shown between the ARC and the Infonet figures:

-   Whereas Infonet may deal with 100+ projects in a year, the
    service bureaux have over 3,000 customers on their books.

-   With Infonet supplying about 25% of the anticipated 1982
    revenue, there is a factor greater than 10:1 in the average
    annual revenue per customer between the two types of service.

o   The exceptions to this pattern are:

-   GSD where the majority of Infonet's potential small customers
    lie.

-   COCOS where the average customer revenue (in the region of
    f.50,000) is closer to the average revenues gained in
    Infonet.

o   Infonet sales effort in 1982 is below its proportion of revenue,
    at 19% of the total. This means that targets for Infonet sales
    yields per sales day have to be higher than those in the ARC side.
   The conclusion is that Infonet is not yet devoting enough effort
    to sales.

DIVISION : TOTAL: ARC-GROEP

PRODUCT/ SERVICE	No. of Customers 1981	Revenue (f.k) 1981	Expected no. of Customers (1982)	Estimated Revenue (f.k) 1982	Average Revenue per customer (f.k) 1981	1982	No. of sales days allocated 1981	1982	Estimated Potential Customers in Netherlands	Comment
Service Bureau-ARC	3,000	18,900	3,500E	20,000E	6.3	5.7	NK	3,240	101,000E	
Service Bureau-ELAN	500	3,400	570E	3,700	6.8	6.5	NK	1,000	19,000	
Standalone-ARC	16	600	4	100	37.5	25.0	NK	360	5,000	
Standalone-ELAN	10	500	6	300	50.0	50.0	NK	200	1,000	
TOTAL-ARC	>3,500	23,400	>4,000	24,100	6.7	6.0	-	4,800	>125,000	
Graphics Services Bureau	59	4,788	80	4,285	81.2	53.6	300	400	60,650	
Administrative System Division	34	3,847	33	3,051	113.1	92.4	NK	600	14,700	
Technical System Division	7	1,135	9	1,290	162.1	143.3	140	160	500	
TOTAL INFONET	100	9,770	122	8,626	97.7	70.7	>800	1,160	>75,000	
TOTAL GROUP	3,600	33,170	>4,100	32,726	9.2	8.0	say>5,000	5,960	>150,000E	

* A customer is anyone who received one or more invoices from a division (or for a product line) during the period.
E - Estimate by consultant

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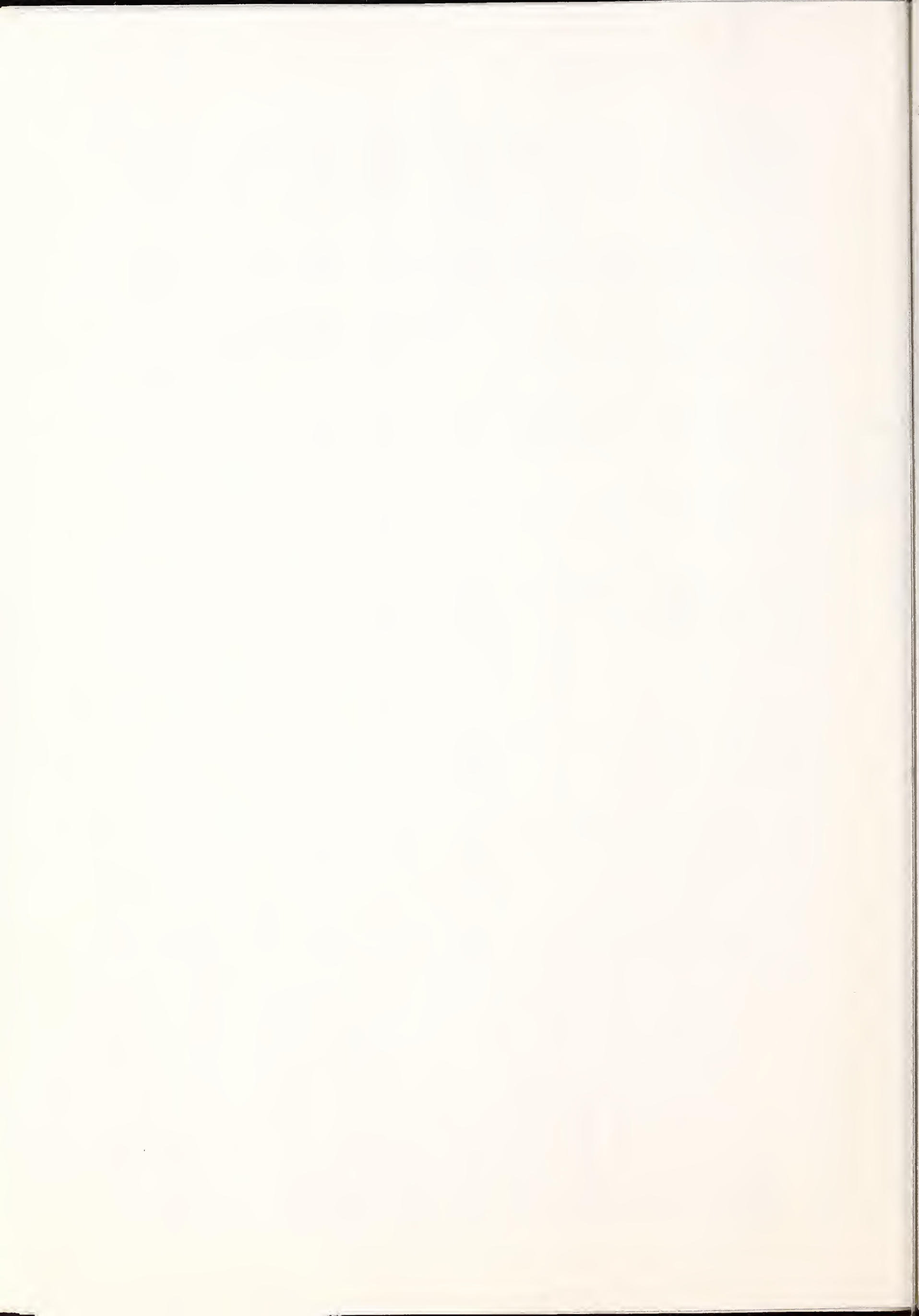
o   Study of the overall picture of the group prompts two questions in
        relation to the merging of two computer services operations with
        such different characteristics:

        -       What is the group marketing strategy into which the Infonet
                activities have to be slotted,

        -       How can integration preserve the beneficial characteristics
                of Infonet without allowing them to be swamped by the
                superior size of the ARC features.

o   In the absence of clear answers to these questions, the result of
        integration is likely to be a dilution of the characteristics of
        both arms of the group, with benefit to neither.

o   It is essential to know what sort of a company the group wishes to
        be in the medium and longer term perspectives. The current group
        policy is two-pronged:

        -       To be one of the largest groups of service company in the
                country,

        -       To be able to offer a wide range of services and systems.

o   This policy now needs to be made more substantial and to be
        expressed in terms of quantified marketing objectives if it is to
        have a chance to succeed under present-day market conditions. As
        expressed currently, group policy is too vague to give the company
        sufficient control over its own destiny. It appears as if the
        group is responding to market pressures rather than anticipating
        them and setting a lead by being seen to be 'ahead of the game'.

o   Resolution of these questions is clearly outside the brief of this
        study, but because of the implications of the directions, which
        may be taken at group level, for the future marketability of

Infonet products, INPUT is of the opinion that its recommendations must be conditional upon there being a satisfactory way of providing a set of objectives which are compatible with both service bureau and system house approaches.

o   Clearly the service bureau approach will in the short-term be the main image as presented externally to the marketplace, but it is clear that the method of delivering services is becoming less of an important factor in distinguishing one service from another. What is of growing importance is whether a computer service is delivered to an end-user or to some intermediate contractor:

-   Many system house activities are provided not as a prime contractor but as a sub-contractor to a larger organisation which takes main responsibility as the vendor of the system. This is particularly true of the larger projects with which Infonet has in the past been successfully associated. Marketing in this situation will have all the characteristics of selling to industrial users.

o   The service bureau field is undoubtedly changing with the advent of desktop microcomputer systems and the lower prices being offered to small businesses for in-house hardware. Bureaux have fallen into two classes with regard to their response to this challenge:

-   The international market leaders like GEISCO, ADP, IBM, Comshare have concentrated on finding large end-user customers often in multinational companies,

-   The smaller, but in European markets equally important, national leader companies:

    .   Centrefile (owned by National Westminster Bank group) in the UK,

. Datev and Taylorix in West Germany,

. GSI, CCNC and others in France, have increased their
penetration of the small business pyramid by slowly
embracing the U.S.H.S. concept and applying it to an
increasingly vertical marketing policy.

o   In relation to this move, ARC's development in recent years has
tended to be something of a hybrid:

-   The development of COCOS is a move of the first type which
brings bigger spending customers into the order-book,

-   Continuation with a large customer base of small budget users
requires some effort of the second type if that base is not
to be eroded by competitors.

o   Coupled with ARC's purchase of Infonet, the overall effect has
been to pull the group in a number of directions at once. The
size of the Netherlands market will not allow this to continue.
The times require an increase in specialisation if overseas
markets are to become available to the Netherlands computer ser-
vices companies as an alternative source of growth to the
increasingly congested home market.

o   Exhibit V-2 shows the updated INPUT forecast of the Netherlands
Processing Services Markets.

B.   TURNKEY SYSTEMS CAPABILITY

o   The turnkey systems market is usually taken to be an adjunct to
the computer services market, though some statisticians and market
researchers put it firmly within it. Whatever the niceties of
definition (INPUT's is given in Appendix A), it is true that the
competition for the small business user has caused the turnkey
market to be fiercely contested at its lower end.

EXHIBIT V-2

NETHERLANDS PROCESSING SERVICES MARKET FORECAST*

BY DELIVERY MODE 1981-1986

USER EXPENDITURE IN FL. MILLION

TYPE OF DELIVERY MODE	1981	1982	1983	1984	1985	1986	AAGR (PERCENT)
INTERACTIVE	142	170	208	258	314	377	22%
REMOTE BATCH	155	171	184	193	199	200	5%
DATABASE ENQUIRY	38	49	61	74	89	111	24%
U.S.H.S.	32	38	48	61	76	91	23%
SUBTOTAL RCS	367	428	501	586	678	779	16%
BATCH	363	399	431	457	475	485	6%
FM	18	21	25	30	35	40	18%
TOTAL - ALL PROCESSING	748	848	957	1,073	1,188	1,304	12%

* Provisional update

o   Traditionally, this market sector has been composed of two
     subsectors:

     -     Once-off large systems, often of a specialist or technical
           nature,

     -     Small business systems, mainly for first-time users but also
           for educated users wishing to distribute their processing.

o   The management and other skills required to be successful in one
     subsector are not the same as in the other. For this among
     reasons, many of the larger specialist software companies in
     Europe have studiously avoided expanding into the small system
     sector, whereas in the U.S.A. the two fields have been served by
     completely different types of company. In the Netherlands this
     market has developed in a different way to the major country
     markets of Western Europe. In the U.K., France and to a lesser
     extent in West Germany there have been clear distinctions between
     the major software houses picking up prime contracts for large
     users, and those specialist system houses who have ventured into
     the hurly-burly of the first time user market where intense com-
     petition from the hardware manufacturers must be expected.

o   Because of the smaller size of the Netherlands, but also because
     of the confidence of its systems houses, many of them have been
     forced or chosen to undertake full turnkey contracts for quite a
     number of years now. It is no wonder that some have been less
     than completely successful if one considers the risks involved.

o   The future of this market is bound up with the future of the soft-
     ware product or package. The pressure on the sector is coming
     from the microcomputer-based very small business machine (less
     than f.50,000 for a total system price). In this area the system
     is bought primarily as a piece of hardware with the software and
     installation being much more like add-ons or accessories. The

suppliers are expected to have a full range of software packages. The very fast growth rates for these systems are causing accompanying expansion to the software products market. Recent reports from the U.S.A. indicate that growth rates in excess of 50% per annum can be expected there in the short-term.

o   There are bound to be disappointments too. In the 1970s the advent of the minicomputer was supposed to usher in the era when every business had its own small machine, but many companies found that the software available was both insufficient and unreliable. The same thing is happening now at the lower end; the multitude of software products offered hides a great deal of programs that just do not work or do not work to specification.

o   The serious business user is swinging his allegiance back to the reliable professional company but at the same time he finds the cost of software still too high.

o   The business turnkey market is becoming divided into layers:

-       At the top end, with a price starting at f.150,000 for the system is the traditional minicomputer-based small business buyer, probably a company with a fast growth rate, increasing its turnover in the range from f.5 million to f.15 million,

-       In the middle are the systems being sold for from f.50 thousand to f.150 thousand; there has up to now been a gap in the market here and the hardware manufacturers have been selling single-station starter systems into it, but it is a segment into which the dealers and distributors of microbased systems will begin to move to seek added-value,

-       At the bottom below f.50 thousand is the hectic market sector which displays consumer product characteristics and where the very small business is likely to be in company with the pro-

fessional user, the hobbyist and the d.p. manager buying for
his senior executives.

o   ARC is reasonably well placed with the range of Infonet products
to continue in the top layer of this market, but a radical review
and revision of the operation needs to take place with the
following objectives:

- Sensible business targets must be set which take into
  account:

  . The current penetration of individual industry sectors
    with small business systems (saturation may be within
    sight),

  . The overall value to the group of the likely revenues
    available,

- Consolidation of all small business system expertise in the
  group: in Amstelveen, Enschede and Amsterdam,

- Proper product development budgets for future generations of
  product,

- Establishment of guidelines for taking 'buy or make' deci-
  sions for both the software and the hardware elements of the
  systems.

o   The approach to the middle layer is via the USHS concept which
must be incorporated into the next generation of product to
replace and enhance the present batch services. This product will
be capable of being used in both stand-alone and networked mode.
How that product or products is developed is outside the scope of
this report.

o   The bottom layer is not at this stage an added-value market for
     ARC.

C.   MERGING THE TWO ORGANISATIONS

o   The merger can be considered at four levels:

     -    Administrative,
     -    Production,
     -    Sales,
     -    Marketing and planning.

o   Administrative departments of the two companies are the simplest
     areas to merge - with expected benefits in cost savings and
     increased inter-company awareness.

o   Production departments equally clearly cannot be totally merged
     because to do so would be to eliminate the separate nature of the
     systems house which is Infonet:

     -    With the exception, of course, of the integration and
          rationalisation of the turnkey systems elements if it is
          decided after the evaluation recommended earlier that trading
          should continue in this sector,

     -    And the establishment of a formal Technical Directorate with
          interfaces not only to Production and Sales on a day-to-day
          basis, but also to Marketing, Planning and Product
          Development.

o   The most difficult is how or to what degree to integrate the sales
     forces. It is in this area that INPUT has a major recommendation:

     -    The Field Sales force should be integrated across the whole
          group under the Sales Manager but the Technical Director

should have special responsibilities in this area during the period from prospect qualification through to order closing.

o   These responsibilities will vary from nil up to complete responsibility for order closing according to the type of business in which a qualified prospect is being handled.

o   The principles upon which this recommendation is based are as follows:

-   The range of activities, their complexity and diversity, in which the ARC-Group is engaged is such that a single salesman cannot sell all products,

-   The group is large enough to require decentralisation into profit-managed divisions or departments,

-   Defining the logical boundaries of these divisions or departments is difficult because:

    .   Market conditions are volatile and requirements for different products/services can come from any sector,

    .   The use of central resources, whether machine or human, requires considerable inter-departmental liaison,

-   The need for centralised control of the sales activities of the group, including:- canvassing, prospecting, qualification of contacts, proposal preparation and order closing is very apparent, but it needs to be balanced by a product-dependent technical sales element if the more specialised services and systems are to be sold and delivered with profit.

o   The implementation of this recommendation in terms of a set of practical prosposals will be detailed in the following chapter.

o   The fourth area in which the merger has implications is almost as
     important as the last. The Marketing and Product Planning func-
     tion of ARC as a group needs to be put on a proper footing. It
     is, however, outside the scope of this report to deal with this
     question. INPUT is convinced that its market recommendations can-
     not be properly installed if this area is not given immediate
     attention and the reorganisation provides a fine opportunity to do
     so.

VI.   RECOMMENDED SALES STRATEGY AND PRODUCT PROFILES

A.   MARKET COVERAGE

o   It is generally agreed in the Netherlands computer services
        industry that continued expansion will require new markets and new
        marketing methods. The ACSI report published recently on behalf
        of the industry organisation has asked for support from both
        government and the banks. It has pointed out the chronic under-
        capitalisation to which the services industry has been prone, and
        has also emphasised the investment needed to produce products and
        services which can be sold on the international markets of Europe
        and the U.S.A.

o   Joint action on behalf of the industry is commendable but slow.
        Meanwhile the ARC-Groep must maintain its position as a leading
        company and the exploration of international mrkets for Infonet
        products can begin now. The three areas which have been thrown up
        by this study as having some international potential are:

        - Database creation and compilation,
        - Image processing and allied technical applications,
        - Banking

o   These are all large project areas involving the sale of:

        - Expertise in the applications,
        - Modular software products,
        - Implementation skills and project management.

o   These areas must be tackled in the order of priority given, within
        an overall group target and plan (with timescales) to gain a
        foothold in international markets.

o   As project and sales experience is built up in foreign markets, it
        will become clearer how and where individual products can be

marketed either directly or through agency arrangements. This
will be an evolutionary process which should build up over the
course of the next five years. The initial thrust should be to
use the Infonet project capability to spearhead the drive to
internationalise the products and services of the ARC-Groep as a
whole. The CAB system sale is obviously a marvellous start.

B.   PRODUCT GROUPS

o   Systems products have been developed within recent years at
        Infonet and ARC to a large extent on an opportunistic basis. This
        is not necessarily bad, and in fact, though a lot of investment
        has been made for which the company has not yet seen a return, a
        number of opportunities are now available which might never have
        been otherwise gained. Having said that, it also remains true
        that the troup is now in need of serious and professional product
        development.

o   It would be tempting at this time of reorganisation to devise and
        introduce a full matrix management structure which devolves profit
        and loss responsibility to the individual product line managers.
        INPUT does not believe that Infonet and ARC are quire ready for
        that degree of complexity in the structure yet. Instead the
        recommendation is to adopt a formal sales orientation across the
        whole group as a stepping stone to the full matrix structure when
        better product line management skills have been developed.

o   The primary planks in this sales orientation are:

        -   The Field Sales force should have group-wide responsibilities
            under the Sales Manager,

        -   Business units (which are the future Product Lines in embryo)
            should be established each of which will have a Sales Manager
            or Senior Sales Executive as well as a Production Head,

- Business units should be tagged according to the degree of repeatability in the type of work involved; a once-off contract for a technical system is at one end of the spectrum (see Exhibit VI-1), while a sale of BEIS or BRUNET system to a small bureau user is at the other; in between is the range of systems/services with a greater or lesser degree of repeatability,

- Units with a high degree of repeatability will be put into the product category; units with a lesser or negligible degree will be classified under the name of projects.

o Exhibit VI-1 illustrates the recommended product groupings into business units, and shows:

- Anticipated 1982 revenues in each (in the case of Small Business systems, the revenue includes Infonet, ARC and ELAN components),

- A demarcation line between Products and Projects,

- The breakdown of units between three traditional computer ser- vices areas:-

  . Processing services
  . Professional services
  . Turnkey systems,

- Two dotted line units which are possible future system areas which will replace or supplement some of the systems in the areas above them and which will have elements of hardware supply; hence their positioning in the line containing turnkey business systems.

o The principal reason for needing a firm demarcation between Products and Projects concerns the handling of sales situations, which should be different between the two types:

RECOMMENDED BUSINESS UNITS

PRODUCT - ORIENTATED

PROJECT - ORIENTATED

| 8.3 | 2.3 | 4.3 | 0.2 | 0.9 | 1.3 |

TAILORED SYSTEMS (MAATWERK) ARC

COCOS (STANDARD & MAAT)

GRAPHICS SERVICES

TEXT SYSTEMS

LARGE BUSINESS SYSTEMS (PTS ETC.)

TECHNICAL SYSTEMS

ELAN

2.4

SMALL BUSINESS SYSTEMS (TURNKEY)

P-based systems

USHS

OFFICE SYSTEMS

Key

= Processing services

= Professional services

= Turnkey systems

EXHIBIT VI - 1
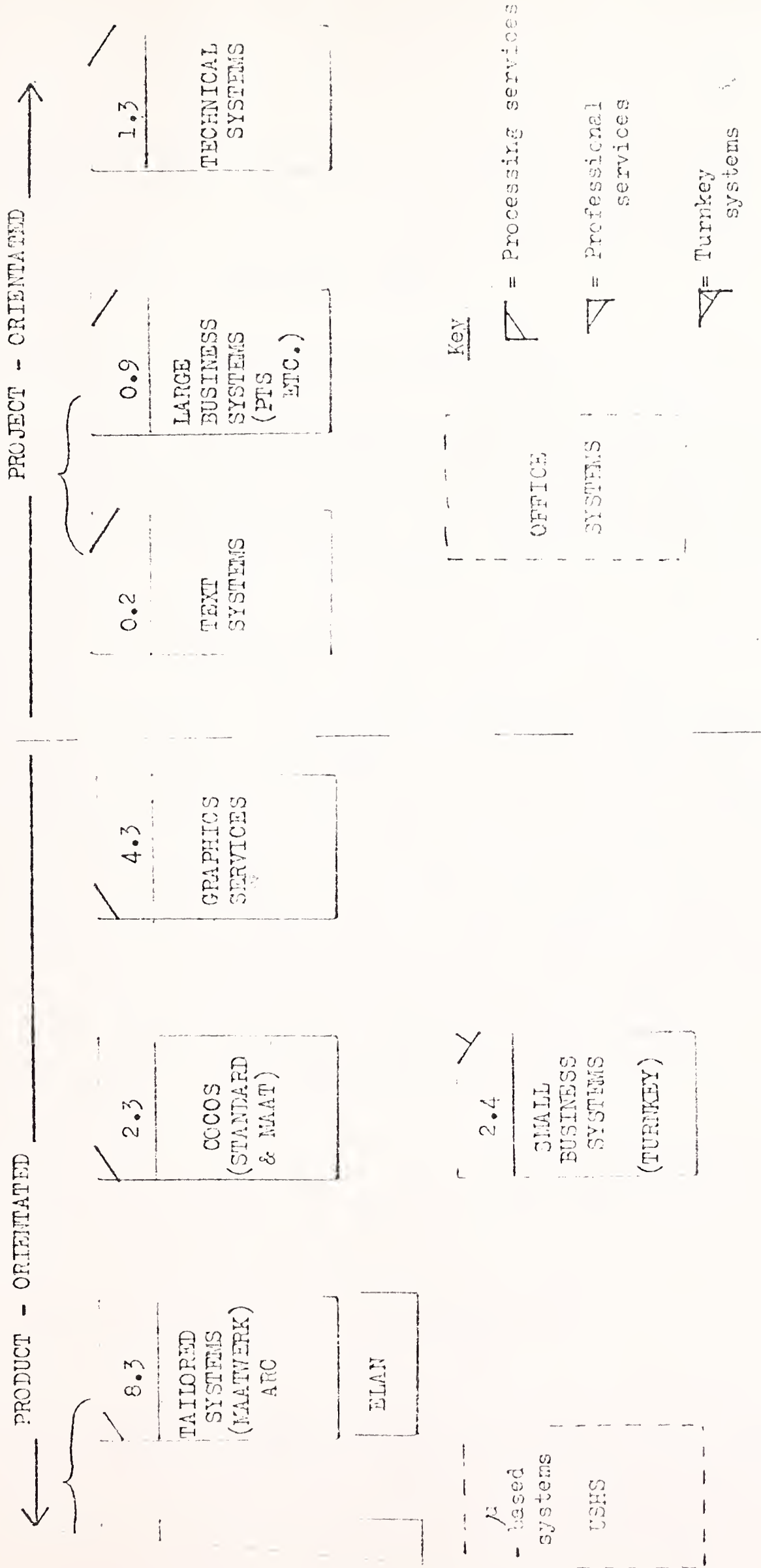
- Product sales will be the responsibility of the Field Sales management from initiation of prospects to the closing of deals. Any pre-sales support required should be supplied out of the production management budgets.

- Project sales will be the sole responsibility of the Field Sales management from initiation of contacts up to the time of qualification as a true prospect i.e. a firm proposal is going to be prepared. At this point and up to the closing of the deal, the responsibility becomes joint between the Field Sales management and the Technical Director. Any pre-sales support is provided out of the production units budgets and the sales situation will normally be handled as a team effort between the sales executive and support analyst, with the Technical Director having any necessary authority to amend the detail or structure of the system proposal. In this way confidence will be built up between the sales side and the production teams, through seeing sales and technical management working side-by-side on a routine basis. It will also ensure that projects with a potentially higher value as future company products (after proper commercialisation through product development) will have a greater chance of getting into the order-book via the use of judicious pricing, and on the other hand that complex systems are not under-priced.

o This approach to selling must (and can) be implemented without disturbing existing sales remuneration arrangements.

o The current Infonet products will under this new scheme be reclassified into different business units:

- Graphics Services becomes a product, is furnished with the correct level of sales and is expected to flourish providing its own pre- and post-sales support; if its services are required as part of a project from another unit, they can be

subcontracted at a standard or agreed internal transfer price (which should include some element of profit).

- Technical Systems remains firmly in the projects area; sufficient continuous sales effort must be made available from within it (at least one senior person dedicated to sales) and this must be co-ordinated in the canvassing and prospecting stges by Field Sales management, though it is expected that this unit will be drawing least of any on the routine sales effort.

- Administrative systems should be split according to its constituent product groups, with small business systems (provisionally defined as those less than f.150,000) being put in a separate unit (see below), and Text and the Large business systems being given separate units which will initially work closely together until larger turnovers start to become usual.

o   The arrangements, and general strategy, outlined above is expected to fit in neatly with the existing reorganisation. It must be complemented by:

- Good budgetting and target setting which involves all production unit managers,

- Establishment of a visible Technical Directorate with responsibilities for:

    . Project sales (as described, jointly with Field Sales),

    . Production and project hardware support,

    . Liaison with Product Development to ensure proper technical evaluation of future products and ideas,

. High-level marketing of the company's image in the computer
  services industry, and in circles overseas,

. A clearing house for new ideas.

- Establishment of a Product Development unit reporting at the
  top of the structure to General management, but with defined
  interfaces to day-to-day production, sales and the Technical
  Directorate.

o Product Development in such a complex environment as computer ser-
   vices needs to be approached with flexibility as a prime
   objective:

- INPUT believes that the "R&D function" of more standard types
  of business must hve its analogue in any successful computer
  services company,

- Research, the R of "R&D", can be most easily supplied through
  the systems house wing, and its consultancy functions,

- Development, the D of "R&D", has two components:-

  . Enhancements to existing products, which should be under-
    taken in a planned manner and budgetted for in the
    Production management's budgets, with the planning being
    initiated through feedback from the sales management.

  . New products, which must be developed and site tested in as
    rigorous a way as possible.

o The areas of immediate concern are:

- Full productisation of viable small business systems,

- Development of a new generation of USHS-based products to supplant the current batch services in the medium-term,

- Longer-term products such as office automation systems, banking products and, possibly further database services.

o   The programme for establishment of the viability of turnkey small business systems should have the following milestones:

- Continuation of qualified business systems sales leads under the Field Sales force; contracts won to be fulfilled by the Large Business systems unit as projects.

- Discontinuance of further active canvassing of small business systems.

- Evaluation of the best small business markets to be sold to.

- Evalution and productisation of all elements of the chosen systems,

    . Hardware and software in conjunction with Technical Directorate,

    . Documentation in conjunction with Production and Sales.

- Test marketing, fixing of targets and product launch.

- Product test and support for a fixed period until the systems can be handed over to the Product Line management, which will need to be chosen and trained.

o   This programme is ideal for being run in parallel with a rationalisation programme for the ELAN division at Enschede, because it has considerable synergy with that unit:

- The right mix of management skills,
- A successful track record in this market area,
- A customer-base suited to this type of solution.

C.   MARKETING METHODS

o   In these days of falling hardware costs (relative to power) and of
the spread of cheaper systems, ARC must look seriously at and make
further use of other methods of marketing products and services:

- Alternative distribution channels,
- Direct mail approaches,
- Telephone sales,
- Viditel and private viewdata.

o   Another area of sales rationalisation which needs to be undertaken
is:

- Marketing to the existing customer base.

o   Use should be made wherever possible of the ABN Bank's central
services and distribution facilities. There is potentially an
enormous amount of synergy to be gained from close parallel
working between the bank and the ARC-Groep. INPUT recommends:

-    The establishment of a joint planning team with the bank with a
brief to examine future services markets for very small
businesses.

APPENDIX A : DEFINITIONS

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o   **Available Market** is the sum of all revenues except captive and export.

o   **Captive Revenue** is taken as revenue from services sold to parent com-
      panies (in a private sector organisation) or to parent
      bodies/organisations (in the public sector). It is excluded from
      available market revenues. Revenue from associate companies in a
      group, or from subsidiaries on the same or lower level in a group, is
      not classed as captive revenue because it is usually gained in com-
      petition with other vendors.

·o   **Computer Services** are services provided by vendors that perform data
      processing using a vendor's computers or assist users to perform such
      functions on their own computers.

o   **Distributed Data Processing (DDP)** 'Distributed processing is the
      deployment of programmable intelligence in order to perform data pro-
      cessing functions where they can be accomplished most effectively,
      through the electronic interconnection of computers and terminals,
      arranged in a telecommunications network adapted to the user's
      characteristics.'

o   A **Distributor** purchases small business computer on an OEM basis from
      the manufacturer and markets them to end users. It may or may not
      provide turnkey systems.

o   **End Users** may buy a system from the hardware supplier(s) and do their
      own programming, interfacing and installation. Alternately, they may
      buy a turnkey system from a manufacturer, systems house or hardware
      integrator.

o   **Export Revenue** is revenue earned in one country (the 'destination') by
      a vendor based in another (the 'source'). Export revenues form part

of the available market in the destination country, but are excluded from that of the source.

o   A Hardware Integrator develops system interface electronics and controllers for the CPU, sensors, peripherals and other ancillary hardware components. It may also develop control systems software in addition to installing the entire system at the end users site.

o   A Minicomputer is usually a 12-, 16- or 18-bit computer which is provided with limited applications software and support and may represent a portion of a complete larger system or network.

-    The larger minicomputers (often with 24- or 32-bit architecture) are sometimes call midicomputers or megaminis; they have the power of a small mainframe and are often used standalone for specialist applications.

o   Peripherals include all input, output and storage devices (other than main memory) which are locally connected to the main processor and are not generally included in other categories, such as terminals.

o   Processing Modes are of three types: facilities management; remote computing services and batch services.

-    Batch Services include data processing performed at vendors' sites on user data which has been physically transported (as opposed to electronically, by communications lines) to those sites. Data entry and data output services, such as OCR and COM processing, are also included.

-    Facilities Management (FM) is the management of all or part of a user's data processing functions under a long-term (not less than one year) contract. To qualify, the contractor must directly plan and control, as well as operate, the data processing facility provided to the user on-site through communications lines,

free-standing or in mixed modes. Simply providing resources,
even though under a long-term contract and/or for all of a user's
processing needs, does not qualify as FM.

-   <u>Remote Computing Services (RCS)</u> are the provision of data pro-
    cessing to a user by means of terminals at the user's site(s)
    connected by a data communications network to the vendor's
    central computer. The three sub-modes of RCS are:

    .   <u>Data Base Enquiry</u>, characterized by the retrieval of infor-
        mation from a vendor-maintained database which may be owned
        by the vendor or a third party.

    .   <u>Interactive</u> (Timesharing), characterized by the interaction
        of the user with the system, primarily for problem solving-
        timesharing, but also for data entry and transaction pro-
        cessing - the user is on-line to the program/files.

    .   <u>Remote Batch</u>, where the user hands over control of a job to
        the vendor's computer, which schedules job execution
        according to priorities and resource requirements.

o   Processing Services encompass FM, RCS and batch services. They are
    categorised by type of service (as distinguished from mode of
    delivery) bought by users, as follows:

    -   <u>General Business</u> services are processing services for applica-
        tions that are common to users across industry categories.
        Software is provided by the vendor; this can be a complete
        package, such as a payroll package, or an application 'tool',
        such as a budgeting model, where a user provides much of the
        customising of the finished product it uses. General business
        processing is often repetitive and transaction-orientated.

- Scientific and Engineering services are the processing of scientific and engineering problems for users across industries. The problems usually involve the solution of mathematical equations. Processing is generally problem solving and is non-repetitive, except in the sense that the same packages or 'tools' are used to address different, but similar, problems.

- Specialty Applications services provide processing for particular functions or problems unique to an industry or industry group. The software is provided by the vendor either s a complete package or as an application 'tool' that the user employs to produce its unique solution. Specialty applications can be either business or scientific in orientation; database services, where the vendor supplies the database and controls access to it (although it may be owned by a third party), are also included under this category. Examples of specialty applications are: seismic data processing, numerically controlled machine tool software development and demand deposit accounting.

- Utility services are those where the vendor provides access to a computer and/or communictions network with basic software that enables any user to develop its own problem solution or processing system. These basic tools include terminal-handling software, sorts, language compilers, database management systems, information retrieval software, scientific library routines and other sytems software.

o Professional Services include management consulting related to EDP, systems consulting, systems design nd programming, and other professional services; e.g., education and training. Services can be provided on a basis of 'time and materials', whereby the user pays for the time used of an individual on a daily or other fixed rate, or 'fixed price', where the user pays a fixed fee for a specific task or series of tasks.

o   Small Business Computer, for the purposes of this study, is a system
      that is built around a Central Processing Unit (CPU), and that has the
      ability to utilise at least 20M bytes of disc capacity, provides
      multiple CRT work-stations, and offers business-orientated systems
      software support.

o   A Small Business Computer Manufacturer builds its systems around a
      proprietary CPU and provides systems software. It may make or buy
      peripheral equipment and semiconductor devices. Distribution to the
      end user may be through its company field sales offices, a network of
      distributors, or both.

o   Software Products are systems and applications packages that are sold
      to computer users by equipment manufacturers, independent vendors and
      others. They include fees for work performed by the vendor to imple-
      ment a package at the user's site.

o   A Systems House integrates hardware and software into a total turnkey
      system to satisfy the data processing requirements of the end user.
      It may also develop systems software products for license to end
      users.

o   A Turnkey System is composed of hardware and software integrated into
      a total system designed to fulfill completely the processing require-
      ments of one or more applications.

o   User Site Hardware Services (USHS) is a service which consists of
      offering a mixed solution to a user's requirements, comprising:

      -     Installation of On-Site Hardware - usually comprising a minicom-
            puter or small mainframe at the user's site for local processing
            of applications best performed on a local machine.

      -     Remote Computing on a vendor's mainframe for applications best
            suited to mainframe power.